Section 16.34.02 Trail Design.

(1) Trail Function. Anticipated trail use will essentially determine what type of trail to construct and where it will be built. There are two (2) general categories of trails: Transportation and Recreation, yet it is perfectly acceptable and common for the uses to be concurrent.

(a) Transportation Trails are generally built as destination trails and primarily connect neighborhoods with one another or with public facilities, which may include: schools, recreation centers, parks, town or resort centers, shopping areas, libraries, etc. The purpose is to allow a non-motorized user a corridor that limits interference with motor vehicle traffic and promotes non-motorized alternatives for short local trips. User types may include cyclists, disabled users, walkers and a variety of other youth type activities. Trail surfaces are generally paved and sometimes compact soft surface.

(b) Trails for Recreation typically provide a connection to natural spaces and provide a range of challenges and features for the trail user. Loop trails are the preferred design that will allow users to begin and end at the same trailhead location. These trails typically connect to open spaces, national forests, state parks, and neighborhood parks. User groups may include mountain and road cyclists; trail runners, equestrians, joggers, hikers, and walkers. Trail surfaces are generally soft-surface or natural surfaces.

(2) Trail Users. These standards are set for Non-Motorized use and focused on all age groups, all levels of ability and generally include the following activity types: walkers, runners, joggers, hikers, cyclists (both mountain and road), skateboarders, disabled users, wheelchairs, equestrians, skiers, In-line skaters, and baby movers (carriages, strollers, joggers, etc.).

While it is clearly not practical for all types of trails in a mountainous environment to be fully accessible to the disabled, where reasonably appropriate, trails should comply with the requirements of the American with Disabilities Act of 1990(ADA).

(3) Americans With Disabilities Act. A trail is considered ADA accessible if it meets the following criteria:

(a) Five (5) foot minimum width.

(b) Hard surfaces- Asphalt and concrete are the most accessible. Compacted crushed stone with a diameter less than three-eights (3/8) inches is also acceptable.

(c) Trail grade less than five (< 5) percent.

(d) Ramps, not stairs, should be provided for grades exceeding the five (5)percent maximum.

(e) Ramp grades should not exceed eight (8) percent and have a level landing for every thirty (30) inches of vertical rise and have a slip resistant surface.

(f) Thirty two (32) inch high handrails should be installed on all ramps and bridges.

(g) Trails should have a rest area every three hundred (300) feet, preferably cleared with a bench.

(h) One (1) or more accessible parking space should be provided at trail parking lots.

(i) If gate or bollards are used to prevent motorized vehicle access to the trail, thirty two (32) inch clearance is necessary for wheelchair access.

(4) Trail Location. The following are guidelines for how trails should be routed to reduce maintenance needs and environmental impacts while maximizing the trail experience.

(a) General Guidelines

(i) Trails should be located and constructed in such a manner as to minimize maintenance and maximize access. Alignment should utilize the natural topography of the land and should follow natural contours where possible with respect to surrounding landforms.

(ii) Design features should preserve and promote natural elements including geologic, scenic, wildlife and historic. **(iii)** Construction must factor in erosion related to use and weather.

(iv) Trail design should consider the trail users experience. Alignments should avoid excessive switchbacks or lengthy steep grades. When creating alignments consider: intended volume, ability and type of user.

(v) Locate trails for both summer and winter activities giving consideration to terrain and climate. Identify snow retention areas for possible cross-country ski trails. In open areas, use trail alignments that take advantage of wind protection and shaded canyon areas.**(vi)** Because each trail site is unique, specific trail proposals through sensitive areas need to be considered on a case-by-case basis.

(vii) Trails should be clearly separated from vehicle traffic. Users are generally safer and travel experiences are enhanced on separated trails. Snow removal and general maintenance are less costly when trails are separated from roads and parking lots.

(viii) The trail grade should not exceed half (1/2) the grade of the hillside the trail is traversing. This is primarily to limit erosion and is a general guideline. For example, if you build across a hillside with a side slope of twenty (20) percent, the trail grade should not exceed ten (10) percent. (D.1)

(b) Standards for Grades, Vertical Clearance and Curve Radii

(i) Grades. Grades of five (5) percent and below are acceptable for standard trail sections. Grades above five percent cannot be considered wheelchair accessible. Intersections should not exceed three (3) percent . Avoid sharp curves on grades exceeding five (5) percent to avoid confrontations between different levels of users.

The following table identifies lengths of trail for grades above five (5) percent (Backcountry, or natural surface trails may exceed these grades for short distances, but must factor in appropriate erosion control measures.)

Trail users need adequate sight-line distances to anticipate changes in the trail and trail users coming the opposite direction. An optimal clear-view distance for bicyclists (the trail user traveling at the highest speed) is one hundred fifty (150) feet. If this distance cannot be met, appropriate signing must be placed to warn the user of curve ahead.

(ii) Vertical Clearance. Vertical Clearance (or ceiling) is a ten (10) foot minimum. This allows for all types of non-motorized users. If pathways will be prepared for use during winter months, clearances should anticipate snow loading and be increased to sixteen (16) feet.

(iii)Curve Radii. Curve Radii will vary between allowed uses on multiple user trails. Bicycle standards should be followed, as this is the fastest moving user group requiring longer sight distances. Refer to the AASHTO Guide for Development of Bicycle Facilities for stopping distances, curve radii and intersection coordination.

(c) Trail Types.

(i) Shared-Use Hard Surface. A shared use path accommodates a wide variety of uses and is typically paved, but can be a natural surface or may accommodate both surface types. Typical widths on a shared use path vary from ten (10) to fourteen (14) feet. The width should be determined on the predicted types of uses and anticipated volumes of users. The design of these trails must consider drainage, sight lines, grade, alignments and slope.

(ii) Crusher Fines or Road Base. Anticipated uses along crushed gravel trails include mountain bikes, pedestrians and horses (where specifically designated). Widths vary from four (4) feet to eight (8) feet in accordance with anticipated intensity of use. Surface drainage across soft-surfaced trails should be designed to minimize erosion of the trail surface and edges, using techniques such as crowning, placement of culverts or

other.

(iii) Back Country or Natural Surface. Back Country trail types are generally used when a low volume recreational use is anticipated and to provide access to natural areas. Surface is natural dirt with widths varying from two to four (2– 4) feet. Design features must include rolling grade dips, grade reversals and other subtle features that prevent and/or discourage erosion.